



**City of Bedford**  
Building Inspections  
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**CURRENTLY ADOPTED BUILDING CODES:**

- INTERNATIONAL BUILDING CODE, 2015 EDITION
- INTERNATIONAL RESIDENTIAL CODE, 2015 EDITION
- INTERNATIONAL MECHANICAL CODE, 2015 EDITION
- INTERNATIONAL PLUMBING CODE, 2015 EDITION
- INTERNATIONAL FUEL GAS CODE, 2015 EDITION
- INTERNATIONAL FIRE CODE, 2015 EDITION
- NATIONAL ELECTRICAL CODE, 2014 EDITION

**AMENDMENTS TO THE 2015 INTERNATIONAL BUILDING CODE**

**Sec. 22-52 Amendments to the International Building Code.**

1. Section 101.1; Insert: City of Bedford
2. \*\*Section 101.4; change to read as follows:

**101.4 Referenced codes.** The other codes listed in Sections 101.4.1 through 101.4.8 and referenced elsewhere in this code, when specifically adopted, shall be considered part of the requirements of this code to the prescribed extent of each such reference. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 or the Electrical Code shall mean the Electrical Code as adopted.

3. \*\*Section 101.4.8; add the following:

**101.4.8 Electrical.** The provisions of the Electrical Code shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

4. \*\* Section 103 and 103.1 change to read as follows:

SECTION 103  
FIRE DEPARTMENT  
INSPECTIONS DIVISION  
CITY OF BEDFORD

**103.1 Creation of enforcement agency.** The FIRE DEPARTMENT, INSPECTIONS DIVISION OF THE CITY OF BEDFORD is hereby created and the official in charge thereof shall be known as the *building official*.

5. \*\*Section 105.2 Work exempt from permit; change to read as follows:

Section 105.2 (1): Playhouses, tool storage and similar uses, provided the floor area does not exceed 50 square feet.

Section 105.2 (2.); Delete

6. \*\*Section 109; add Section 109.7 to read as follows:

**109.7 Re-inspection Fee.** A fee as established by city council resolution may be charged when:

1. The inspection called for is not ready when the inspector arrives;
2. No building address or permit card is clearly posted;
3. City approved plans are not on the job site available to the inspector;
4. The building is locked or work otherwise not available for inspection when called;
5. The job site is red-tagged twice for the same item;
6. The original red tag has been removed from the job site.
7. Failure to maintain erosion control, trash control or tree protection.

Any re-inspection fees assessed shall be paid before any more inspections are made on that job site.

7. \*\*Section 109; add Section 109.8, 109.8.1, 109.8.2 and 109.9 to read as follows:

**109.8 Work without a permit.**

**109.8.1 Investigation.** Whenever work for which a permit is required by this code has been commenced without first obtaining a permit, a special investigation shall be made before a permit may be issued for such work.

**109.8.2 Fee.** An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is subsequently issued. The investigation fee shall be equal to the amount of the permit fee required by this code or the city fee schedule as applicable. The payment of such investigation fee shall not exempt the applicant from compliance with all other provisions of either this code or the technical codes nor from penalty prescribed by law.

**109.9 Unauthorized cover up fee.** Any work concealed without first obtaining the required inspection in violation of Section 110 shall be assessed a fee as established by the city fee schedule.

8. \*\*Section 110.3.5; Lath, gypsum board and gypsum panel product inspection. Delete exception
9. \*\*Section 202; amend definition of Ambulatory Care Facility as follows:

**AMBULATORY CARE FACILITY.** Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation by the services provided. This group may include but not be limited to the following:

- Dialysis centers
- Procedures involving sedation
- Sedation dentistry
- Surgery centers
- Colonic centers
- Psychiatric centers

10. \*\*Section 202; add definition of Assisting Living Facilities to read as follows.

**ASSISTED LIVING FACILITIES.** *A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff.*

11. \*\*Section 202; change definition of "Atrium" as follows:

**ATRIUM.** An opening connecting ~~two~~ three or more stories... *{Balance remains unchanged}*

12. \*\*Section 202; add definition of "Repair Garage" as follows:

**REPAIR GARAGE.** A building, structure or portion thereof used for servicing or repairing motor vehicles. This occupancy shall also include garages involved in minor repair, modification and servicing of motor vehicles for items such as lube changes, inspections, windshield repair or replacement, shocks, minor part replacement and other such minor repairs.

13. \*\*\*Section 202; amend definition of SPECIAL INSPECTOR to read as follows:

**SPECIAL INSPECTOR.** A qualified person employed or retained by an approved agency who shall prove to the satisfaction of the registered design professional in responsible charge and approved by the Building Official as having the competence necessary to inspect a particular type of construction requiring special inspection.

**HIGH-RISE BUILDING.** A building with an occupied floor located more than ~~75~~ 55 feet ~~(22-860 mm)~~ (16 764 mm) above the lowest level of fire department vehicle access.

14. \*\*Section 303.1.3; add a sentence to read as follows:

**303.1.3 Associated with Group E occupancies.** A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a separate occupancy. Except when applying the assembly requirements of Chapter 10 and 11.

15. \*\*Section 304.1; add the following to the list of occupancies:

Fire stations  
Police stations with detention facilities for 5 or less

16. \*\*Section 307.1.1; add the following sentence to Exception 4:

4. Cleaning establishments... *{Text unchanged}* ...with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711 or both. See also IFC Chapter 21, Dry Cleaning Plant provisions.

17. \*\*Section 403.1, Exception 3; change to read as follows:

3. The open air portion of a building *[remainder unchanged]*

18. \*\*Section 403.3, Exception; delete item 2.

19. \*\*\*Section 403.3.2; change to read as follows:

**[F] 403.3.2 Water supply to required fire pumps.** In buildings that are more than ~~420~~ 120 feet (36.5 m) in building height, required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

**Exception:** *{No change to exception.}*

20. \*\*Section 404.5; delete Exception.

21. \*\*Section 406.3.5.1 Carport separation; add sentence to read as follows:

A fire separation is not required between a Group R-2 and U carport provided that the carport is entirely open on all sides and that the distance between the two is at least 10 feet (3048 mm).

22. Section 501.2 Address Identification; Change 501.2 to read as follows:

- (1) New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each building number and letter shall be not less than eight (8) inches high with a minimum one (1) inch stroke width. Each suite and apt number and letter shall be not less than four (4) inches high with a minimum one-half (1/2) inch stroke width. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response.
- (2) Where access is by means of a private road and the building address identification required in section 501.2 (1) cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure.
- (3) R-3 Single Family occupancies shall have approved numerals of a minimum (4) inches high with a minimum one-half (1/2) inch stroke width and a color contrasting with the background clearly visible and legible from the street fronting the property and rear alleyway where such alleyway exists.

23. Section 501.2.1: add Section 501.2.1 Multi-family Complex Supplemental Addresses to read as follows:

**Section 501.2.1 Multi-family Complex Supplemental Addresses.** Reflective supplemental building addresses shall be installed in conjunction with fire lane marking at all multi-family occupancies in excess of 4 dwelling units including club rooms and offices where a single street address number is used to designate the buildings official address. Supplemental building addresses shall be installed as follows:

- (1) The marking shall be a minimum of 24 inches by 12 inches red rectangle painted on the pavement, in conjunction to the red fire lane markings.
- (2) The red rectangle shall have white reflective numbers that indicate the street address of the building.
- (3) Numbers shall be in bold font, measuring a minimum of 10 inches in height, easily readable from a moving vehicle.
- (4) Supplemental building addresses shall only be installed on private property, near the center of the building. Where the front and end of the building, or any part of the front or end of the building border a fire lane, the numbers shall be required on each side. Maintenance of the supplemental numbers shall be the same as required for fire lanes.

24. \*\*Section 506.2.2; add sentence to read as follows:

**506.2.2 Open Space Limits.** Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. In order to be considered as accessible, if not in direct contact with a street or fire lane, a minimum 10-foot wide pathway meeting fire department access from the street or approved fire lane shall be provided.

25. \*\*Section 712.1.9, change item 4 to read as follows:

4. Is not open to a corridor in Group I and R H occupancies.

26. \*\*Section 901.6.1; add Section 901.6.1.1 to read as follows:

**901.6.1.1 Standpipe Testing.** Building owners/managers must maintain and test standpipe systems as per NFPA 25 requirements. The following additional requirements shall be applied to the testing that is required every 5 years:

1. The piping between the Fire Department Connection (FDC) and the standpipe shall be backflushed when foreign material is present, and also hydrostatically tested for all FDC's on any type of standpipe system. Hydrostatic testing shall also be conducted in accordance with NFPA 25 requirements for the different types of standpipe systems.

2. For any manual (dry or wet) standpipe system not having an automatic water supply capable of flowing water through the standpipe, the tester shall connect hose from a fire hydrant or portable pumping system (as approved by the fire code official) to each FDC, and flow water through the standpipe system to the roof outlet to verify that each inlet connection functions properly. Confirm that there are no open hose valves prior to introducing water into a dry standpipe. There is no required pressure criteria at the outlet. Verify that check valves function properly and that there are no closed control valves on the system.
  3. Any pressure relief, reducing, or control valves shall be tested in accordance with the requirements of NFPA 25. All hose valves shall be exercised.
  4. If the FDC is not already provided with approved caps, the contractor shall install such caps for all FDC's as required by the fire code official.
  5. Upon successful completion of standpipe test, place a blue tag (as per Texas Administrative Code, Fire Sprinkler Rules for Inspection, Test and Maintenance Service (ITM) Tag) at the bottom of each standpipe riser in the building. The tag shall be check-marked as "Fifth Year" for Type of ITM, and the note on the back of the tag shall read "5 Year Standpipe Test" at a minimum.
  6. The procedures required by Texas Administrative Code Fire Sprinkler Rules with regard to Yellow Tags and Red Tags or any deficiencies noted during the testing, including the required notification of the local Authority Having Jurisdiction (fire code official) shall be followed.
  7. Additionally, records of the testing shall be maintained by the owner and contractor, if applicable, as required by the State Rules mentioned above and NFPA 25.
  8. Standpipe system tests where water will be flowed external to the building shall not be conducted during freezing conditions or during the day prior to expected night time freezing conditions.
  9. Contact the fire code official for requests to remove existing fire hose from Class II and III standpipe systems where employees are not trained in the utilization of this firefighting equipment. All standpipe hose valves must remain in place and be provided with an approved cap and chain when approval is given to remove hose by the fire code official.
27. **\*\*Section 903.1.1; change to read as follows:**
- [F] 903.1.1 Alternative protection.** Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted instead of in addition to automatic sprinkler protection where recognized by the applicable standard and, or as approved by the fire code official.
28. **Add Section 903.1.2 to read as follows:**
- 903.1.2 Residential sprinklers.** Unless specifically allowed by this Code, residential sprinkler systems installed in accordance with NFPA 13D or NFPA 13R shall not be granted exemptions or reductions, commonly known as "trade-offs" permitted by other requirements of this Code. Additionally, residential sprinkler systems installed in accordance with NFPA 13R must include attic protection.
29. **\*\*Section 903.2; add the following:**
- [F] 903.2 Where required.** Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12. Automatic Sprinklers shall not be installed in elevator machine rooms, elevator machine spaces, and elevator hoistways, other than pits where such sprinklers would not necessitate shunt trip requirements under any circumstances. Storage shall not be allowed within the elevator machine room. Signage shall be provided at the entry doors to the elevator machine room indicating "ELEVATOR MACHINERY – NO STORAGE ALLOWED."
30. **[F] \*\*Section 903.2; delete the exception.**

31. \*\*Section 903.2.9; add Section 903.2.9.3 to read as follows:

**[F] 903.2.9.3 Self-service storage facility.** An automatic sprinkler system shall be installed throughout all self-service storage facilities.

32. Section 903.2.11; change 903.2.11.3 and add 903.2.11.7, 903.2.11.8, and 903.2.11.9 as follows:

**903.2.11.3 Buildings ~~55~~ 35 feet or more in height.** An automatic sprinkler system shall be installed throughout buildings that have one or more stories ~~with an occupant load of 30 or more,~~ other than penthouses in compliance with Section 1510 of the *International Building Code*, located ~~55~~ 35 feet (16 764 10 668 mm) or more above the lowest level of fire department vehicle access, measured to the finished floor.

**Exceptions:**

1. Open parking structures in compliance with Section 406.5 of the *International Building Code*, having no other occupancies above the subject garage.
2. ~~Occupancies in Group F-2.~~

**903.2.11.7 High-Piled Combustible Storage.** For any building with a clear height exceeding 12 feet (4572 mm), see Chapter 32 of the IFC to determine if those provisions apply.

**903.2.11.8 Spray Booths and Rooms.** New and existing spray booths and spraying rooms shall be protected by an approved automatic fire-extinguishing system.

**903.2.11.9 Buildings Over 6,000 sq.ft.** An automatic sprinkler system shall be installed throughout all buildings and any portion of a building that meet any one of the following criteria listed below:

- (1) A building area 6,000 sq. ft. or greater
- (2) A tenant space 6,000 sq. ft or greater
- (3) An existing building that is enlarged to be 6,000 sq. ft. or greater
- (4) An tenant space within an existing building that is enlarged to be 6,000 sq. ft. or greater

For the purpose of this provision, fire walls shall not define separate buildings.

**Exception:** Open parking garages in compliance with Section 406.3 of the International Building Code, provided fire department standpipes and connections are installed in such a way that no portion of the garage is more than 100 feet, unobstructed hose lay from the connection.

33. \*\*Section 903.3.1.1.1; change to read as follows:

**[F] 903.3.1.1.1 Exempt locations.** When approved by the *fire code official*, automatic sprinklers shall not be required in the following rooms or areas where such ...{text unchanged}... because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the code official.
3. Generator and transformer rooms, under the direct control of a public utility, separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. ~~Rooms or areas that are of noncombustible construction with wholly noncombustible contents.~~
5. ~~Fire service access~~ Elevator machine rooms, and machinery spaces, and hoistways, other than pits where such sprinklers would not necessitate shunt trip requirements under any

circumstances.

6. {Delete.}

34. \*\*Section 903.3.1.2; add the following:

**[F] 903.3.1.2 NFPA 13R sprinkler systems.** Where allowed in buildings of Group R, up to and including four stories in height, *automatic sprinkler systems* shall be installed throughout in accordance with NFPA 13R or in accordance with state law.

35. \*\*Section 903.3.1.2.3; add section to read as follows:

**[F] Section 903.3.1.2.3 Attics and Attached Garages.** Sprinkler protection is required in attic spaces of such buildings two or more stories in height, in accordance with NFPA 13 and or NFPA 13R requirements, and attached garages.

36. \*\*Section 903.3.1.3; change to read as follows:

**[F] 903.3.1.3 NFPA 13D sprinkler systems.** *Automatic sprinkler systems* installed in one- and two-family *dwelling*s; Group R-3; Group R-4 Condition 1 and *townhouses* shall be permitted to be installed throughout in accordance with NFPA 13D or in accordance with state law.

37. \*\*\*Section 903.3.1.4; add to read as follows:

**[F] 903.3.1.4 Freeze protection.** Freeze protection systems for automatic fire sprinkler systems shall be in accordance with the requirements of the applicable referenced NFPA standard and this section.

**903.3.1.4.1 Attics.** Only dry-pipe, preaction, or listed antifreeze automatic fire sprinkler systems shall be allowed to protect attic spaces.

**Exception:** Wet-pipe fire sprinkler systems shall be allowed to protect non-ventilated attic spaces where:

1. The attic sprinklers are supplied by a separate floor control valve assembly to allow ease of draining the attic system without impairing sprinklers throughout the rest of the building, and
2. Adequate heat shall be provided for freeze protection as per the applicable referenced NFPA standard, and
3. The attic space is a part of the building's thermal, or heat, envelope, such that insulation is provided at the roof deck, rather than at the ceiling level.

**903.3.1.4.2 Heat trace/insulation.** Heat trace/insulation shall only be allowed where approved by the fire code official for small sections of large diameter water-filled pipe.

38. \*\*Section 903.3.5; add a second paragraph to read as follows:

**[F]** Water supply as required for such systems shall be provided in conformance with the supply requirements of the respective standards; however, every water-based fire protection system shall be designed with a 10 psi safety factor. Reference Section 507.4 for additional design requirements.

39. \*\*Section 903.4; add a second paragraph after the exceptions to read as follows:

**[F]** Sprinkler and standpipe system water-flow detectors shall be provided for each floor tap to the sprinkler system and shall cause an alarm upon detection of water flow for more than 45 seconds. All control valves in the sprinkler and standpipe systems except for fire department hose connection valves shall be electrically supervised to initiate a supervisory signal at the central station upon tampering.

40. \*\*Section 903.4.2; add second paragraph to read as follows:

**[F]** The alarm device required on the exterior of the building shall be a weatherproof horn/strobe notification appliance with a minimum 75 candela strobe rating, installed as close as practicable to the fire department connection.

41. \*\*Section 905.2; change to read as follows:

**[F] 905.2 Installation standard.** Standpipe systems shall be installed in accordance with this section and NFPA 14. Manual dry standpipe systems shall be supervised with a minimum of 10 psig and a maximum of 40 psig air pressure with a high/low alarm.

42. \*\*Section 905.3; add Section 905.3.9 and exception to read as follows:

**[F] 905.3.9 Buildings exceeding 10,000 sq. ft.** In buildings exceeding 10,000 square feet in area per story and where any portion of the building's interior area is more than 200 feet (60960 mm) of travel, vertically and horizontally, from the nearest point of fire department vehicle access, Class I automatic wet or manual wet standpipes shall be provided.

**Exceptions:**

1. Automatic dry and semi-automatic dry standpipes are allowed as provided for in NFPA 14.
2. R-2 occupancies of four stories or less in height having no interior corridors.

43. \*\*\*Section 905.4, change Item 1., 3., and 5. and add Item 7. to read as follows:

**[F]** 1. In every required ~~interior~~ exit stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at an intermediate landing between stories, unless otherwise approved by the fire code official.

2. {No change.}

3. In every exit passageway, at the entrance from the exit passageway to other areas of a building.

**Exception:** Where floor areas adjacent to an exit passageway are reachable from an ~~interior~~ exit stairway hose connection by a .....{No change to rest.}

4. {No change.}

5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), each standpipe shall be provided with a two-way a-hose connection shall be located to serve the roof or at the highest landing of an ~~interior~~ exit stairway with stair access to the roof provided in accordance with Section 1011.12.

6. {No change.}

7. When required by this Chapter, standpipe connections shall be placed adjacent to all required exits to the structure and at two hundred feet (200') intervals along major corridors thereafter, or as otherwise approved by the fire code official.

44. \*\*Section 905.9; add a second paragraph after the exceptions to read as follows:

**[F]** Sprinkler and standpipe system water-flow detectors shall be provided for each floor tap to the sprinkler system and shall cause an alarm upon detection of water flow for more than 45 seconds. All control valves in the sprinkler and standpipe systems except for fire department hose connection valves shall be electrically supervised to initiate a supervisory signal at the central station upon tampering.

45. \*\*Section 907.1; add Section 907.1.4 and 907.1.4.1 to read as follows:

**[F] 907.1.4 Design standards.** Where a new fire alarm system is installed, the devices shall be addressable. Fire alarm systems utilizing more than 20 smoke detectors shall



have analog initiating devices.

46. \*\*Section 907.2.1; change to read as follows:

**[F] 907.2.1 Group A.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies ~~where the having an occupant load due to the assembly occupancy is of 300 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~ Group A occupancies not separated from one another in accordance with Section 707.3.-10 of the *International Building Code* shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

**Exception:** {No change.}

Activation of fire alarm notification appliances shall:

1. Cause illumination of the *means of egress* with light of not less than 1 foot-candle (11 lux) at the walking surface level, and
2. Stop any conflicting or confusing sounds and visual distractions.

47. \*\*Section 907.2.3; change to read as follows:

**[F] 907.2.3 Group E.** A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E educational occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system. An approved smoke detection system shall be installed in Group E day care occupancies. Unless separated by a minimum of 100' open space, all buildings, whether portable buildings or the main building, will be considered one building for alarm occupant load consideration and interconnection of alarm systems.

**Exceptions:**

1. {No change.}
- 2.1. Residential In-Home day care with not more than 12 children may use interconnected single station detectors in all habitable rooms. (For care of more than five children 2 1/2 or less years of age, see Section 907.2.6.) {No change to remainder of exceptions.}

48. \*\*Section 907.2.13, Exception 3; change to read as follows:

**[F] 3.** Open air portions of buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the *International Building Code*; however, this exception does not apply to accessory uses including but not limited to sky boxes, restaurants and similarly enclosed areas.

49. \*\*Section 907.4.2; add Section 907.4.2.7 to read as follows:

**[F] 907.4.2.7 Type.** Manual alarm initiating devices shall be an approved double action type.

50. \*\*Section 907.6.1; add Section 907.6.1.1 to read as follows:

**[F] 907.6.1.1 Wiring Installation.** All fire alarm systems shall be installed in such a manner that a failure of any single initiating device or single open in an initiating circuit conductor will not interfere with the normal operation of other such devices. All signaling line circuits (SLC) shall be installed in such a way that a single open will not interfere with the operation of any addressable devices (Class A). Outgoing and return SLC conductors shall be installed in accordance with NFPA 72 requirements for Class A circuits and shall have a minimum of four feet separation

horizontal and one foot vertical between supply and return circuit conductors. The initiating device circuit (IDC) from a signaling line circuit interface device may be wired Class B, provided the distance from the interface device to the initiating device is ten feet or less.

51. \*\*\*Section 907.6.3; delete all four Exceptions.

52. \*\*\*Section 907.6.6; – add sentence at end of paragraph to read as follows:

**[F]** See 907.6.3 for the required information transmitted to the supervising station.

53. \*\*\*Section 909.22; add to read as follows:

**[F] 909.22 Stairway or ramp pressurization alternative.** Where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and the stair pressurization alternative is chosen for compliance with Building Code requirements for a smokeproof enclosure, interior exit stairways or ramps shall be pressurized to a minimum of 0.10 inches of water (25 Pa) and a maximum of 0.35 inches of water (87 Pa) in the shaft relative to the building measured with all interior exit stairway and ramp doors closed under maximum anticipated conditions of stack effect and wind effect. Such systems shall comply with Section 909, including the installation of a separate fire-fighter's smoke control panel as per Section 909.16, and a Smoke Control Permit shall be required from the Fire Department as per Section 105.7.

**[F] 909.22.1 Ventilating equipment.** The activation of ventilating equipment for the stair or ramp pressurization system shall be by smoke detectors installed at each floor level at an approved location at the entrance to the smokeproof enclosure. When the closing device for the stairway or ramp shaft and vestibule doors is activated by smoke detection or power failure, mechanical equipment shall activate and operate at the required performance levels. Smoke detectors shall be installed in accordance with Section 907.3.

**[F] 909.22.1.1 Ventilation systems.** Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

1. Equipment, control wiring, power wiring and ductwork shall be located exterior to the building and directly connected to the smokeproof enclosure or connected to the smokeproof enclosure by ductwork enclosed by not less than 2-hour fire barriers constructed in accordance with Section 707 of the Building Code or horizontal assemblies constructed in accordance with Section 711 of the Building Code, or both.
2. Equipment, control wiring, power wiring and ductwork shall be located within the smokeproof enclosure with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than 2-hour barriers constructed in accordance with Section 707 of the Building Code or horizontal assemblies constructed in accordance with Section 711 of the Building Code, or both.
3. Equipment, control wiring, power wiring and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by not less than 2-hour fire barriers constructed in accordance with Section 707 of the Building Code or horizontal assemblies constructed in accordance with Section 711 of the Building Code, or both.

**Exceptions:**

1. Control wiring and power wiring utilizing a 2-hour rated cable or cable system.
2. Where encased with not less than 2 inches (51 mm) of concrete.
3. Control wiring and power wiring protected by a listed electrical circuit protective systems with a fire-resistance rating of not less than 2 hours.

**[F] 909.22.1.2 Standby power.** Mechanical vestibule and stairway and ramp shaft ventilation systems and automatic fire detection systems shall be provided with standby power in accordance with Section 2702 of the Building Code.

**[F] 909.22.1.3 Acceptance and testing.** Before the mechanical equipment is approved, the system shall be tested in the presence of the fire code official to confirm that the system is operating in compliance with these requirements.

54. \*\*\*Section 910.2; change Exception 2. and 3. to read as follows:

**[F] 2.** Only manual smoke and heat removal shall not be required in areas of buildings equipped with early suppression fast-response (ESFR) sprinklers. Automatic smoke and heat removal is prohibited.

3. Only manual smoke and heat removal shall not be required in areas of buildings equipped with control mode special application sprinklers with a response time index of  $50(m^2S)^{1/2}$  or less that are listed to control a fire in stored commodities with 12 or fewer sprinklers. Automatic smoke and heat removal is prohibited.

55. \*\*\*Section 910.2; add subsections 910.2.3 with exceptions to read as follows:

**[F] 910.2.3 Group H.** Buildings and portions thereof used as a Group H occupancy as follows:

1. In occupancies classified as Group H-2 or H-3, any of which are more than 15,000 square feet (1394 m<sup>2</sup>) in single floor area.

**Exception:** Buildings of noncombustible construction containing only noncombustible materials.

2. In areas of buildings in Group H used for storing Class 2, 3, and 4 liquid and solid oxidizers, Class 1 and unclassified detonable organic peroxides, Class 3 and 4 unstable (reactive) materials, or Class 2 or 3 water-reactive materials as required for a high-hazard commodity classification.

**Exception:** Buildings of noncombustible construction containing only noncombustible materials.

56. \*\*Section 910.3; add section 910.3.4 to read as follows:

**[F] 910.3.4 Vent operation.** Smoke and heat vents shall be capable of being operated by approved automatic and manual means. Automatic operation of smoke and heat vents shall conform to the provisions of Sections 910.3.2.1 through 910.3.2.3.

**[F] 910.3.4.1 Sprinklered buildings.** Where installed in buildings equipped with an approved automatic sprinkler system, smoke and heat vents shall be designed to operate automatically. The automatic operating mechanism of the smoke and heat vents shall operate at a temperature rating at least 100 degrees F (approximately 38 degrees Celsius) greater than the temperature rating of the sprinklers installed.

**Exception:** Manual only system per 910.2

**[F] 910.3.4.2 Nonsprinklered buildings.** Where installed in buildings not equipped with an approved automatic sprinkler system, smoke and heat vents shall operate automatically by actuation of a heat-responsive device rated at between 100°F (56°C) and 220°F (122°C) above ambient.

**Exception:** Listed gravity-operated drop out vents.

57. \*\*Section 910.4.3.1; change to read as follows:

**[F] 910.4.3.1 Makeup air.** Makeup air openings shall be provided within 6 feet (1829 mm) of the floor level. Operation of makeup air openings shall be ~~manual or~~ automatic. The minimum gross area of makeup air inlets shall be 8 square feet per 1,000 cubic feet per minute (0.74 m<sup>2</sup> per 0.4719 m<sup>3</sup>/s) of smoke exhaust.

58. ~~\*\*Section 910.4.4; change to read as follows:~~

**[F] 910.4.4 Activation.** The mechanical smoke removal system shall be activated ~~by manual controls only~~ automatically by the automatic sprinkler system or by an approved fire detection system. Individual manual controls shall also be provided.

**Exception:** Manual only systems per Section 910.2.

59. ~~\*\*Section 912.2; add Section 912.2.3 to read as follows:~~

**[F] 912.2.3 Hydrant distance.** An approved fire hydrant shall be located within 100 feet of the fire department connection as the fire hose lays along an unobstructed path.

60. ~~\*\*Section 913.2.1; add second paragraph and exception to read as follows:~~

**[F]** When located on the ground level at an exterior wall, the fire pump room shall be provided with an exterior fire department access door that is not less than 3 ft. in width and 6 ft. – 8 in. in height, regardless of any interior doors that are provided. A key box shall be provided at this door, as required by Section 506.1.

**Exception:** When it is necessary to locate the fire pump room on other levels or not at an exterior wall, the corridor leading to the fire pump room access from the exterior of the building shall be provided with equivalent fire resistance as that required for the pump room, or as approved by the fire code official. Access keys shall be provided in the key box as required by Section 506.1.

61. ~~\*\*Section 1006.2.2.6 Add a new Section 1006.2.2.6 as follows:~~

**1006.2.2.6 Electrical Rooms.** For electrical rooms, special exiting requirements may apply. Reference the electrical code as adopted.

62. ~~\*\*Section 1009.1; add the following Exception 4:~~

**Exceptions:** *{previous exceptions unchanged}*

4. Buildings regulated under State Law and built in accordance with State registered plans, including any variances or waivers granted by the State, shall be deemed to be in compliance with the requirements of Section 1009.

63. ~~\*\*Section 1010.1.9.4 Bolt Locks; amend exceptions 3 and 4 as follows:~~

**Exceptions:**

3. Where a pair of doors serves an *occupant load* of less than 50 persons in a Group B, F, M or S occupancy. *{Remainder unchanged}*

4. Where a pair of doors serves a Group A, B, F, M or S occupancy *{Remainder unchanged}*

64. ~~\*\*\*Section 1015.8 Window Openings. REVISE text as follows:~~

1. Operable windows where the top of the sill of the opening is located more than ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F 2006.

65. ~~\*\*Section 1020.1 Construction; add exception 6 to read as follows:~~

6. In group B occupancies, corridor walls and ceilings need not be of fire-resistive construction within a single tenant space when the space is equipped with approved automatic smoke-detection within the corridor. The actuation of any detector shall activate self-annunciating alarms audible in all areas within the corridor. Smoke detectors shall be connected to an approved automatic fire alarm system where such system is provided.

66. \*\*Section 1029.1.1.1 Delete this section. Spaces under grandstands and bleachers;

67. \*\*\*Section 1101.1 Scope. add exception to Section 1101.1 as follows:

**Exception:** Components of projects regulated by and registered with Architectural Barriers Division of Texas Department of Licensing and Regulation shall be deemed to be in compliance with the requirements of this chapter.

68. \*\*\*Section 1203.1; amend to read as follows:

**\*\*\*1203.1 General.** Buildings shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the *International Mechanical Code*.

Where air infiltration rate in a *dwelling unit* is ~~less than~~ 5 air changes or less per hour when tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section 402.4.1.2 of the *International Energy Conservation Code*, the *dwelling unit* shall be ventilated by mechanical means in accordance with Section 403 of the *International Mechanical Code*.

69. Section 1405.14 amend to end of paragraph to read as follows:

*(Existing language unchanged).* Vinyl siding shall not be an approved material for wall covering installation on new and/or existing Groups R-2, I-1, I-2, I-3 and I-4 occupancies.

70. \*\*Table 1505.1; delete footnote c and replace footnote b with the following:

b. Non-classified roof coverings shall be permitted on buildings of U occupancies having not more than 120 sq. ft. of protected roof area. When exceeding 120 sq. ft. of protected roof area, buildings of U occupancies may use non-rated non-combustible roof coverings.

e. [delete]

71. \*\*Section 1505.7; delete the section

72. \*\*Section 1510.1; add a sentence to read as follows:

**1510.1 General.** Materials and methods of applications used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15. All individual replacement shingles or shakes shall be in compliance with the rating required by Table 1505.1.

*{text of exception unchanged}*

73. Section 1612.3; Insert: City of Bedford

74. Section 1612.3; Insert: 09/25/2009

75. \*\*\*Section 1704.2, Special inspections and tests is amended to read as follows:

**1704.2 Special inspections and tests.** Where application is made to the Building Official for construction as specified in Section 105, the owner or the owner's authorized agent, or the registered design professional in responsible charge, other than the contractor, shall employ one or more approved agencies to provide special inspections and tests during construction on the types of work listed under Section 1705 and identify the approved agencies to the Building Official. The special inspector shall not be employed by the contractor. These special inspections and tests are in addition to the inspections identified by the Building Official that are identified in Section 110.

76. \*\*\*Section 1704.2.1, Special inspector qualifications, is amended to read as follows:

**1704.2.1 Special inspector qualifications.** Prior to the start of construction and or upon request, the approved agencies shall provide written documentation to the registered design professional in responsible charge and the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. [Remainder unchanged]

77. \*\*\*Section 1704.2.4, Report requirement, is amended to read as follows:

**1704.2.4 Report requirement.** Approved agencies shall keep records of special inspections and tests. The approved agency shall submit reports of special inspections and tests to the Building Official upon request, and to the registered design professional in responsible charge. Individual inspection reports ~~[Reports]~~ shall indicate that work inspected or tested was or was not completed in conformance to approved construction documents. [Remainder unchanged]

78. \*\*\*Section 1704.2.5.2, Fabricator approval, is amended to read as follows:

**1704.2.5.1 Fabricator approval.** Special inspections during fabrications required by Section 1704 are not required where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved agency, or a fabricator that is enrolled in a nationally accepted inspections program. At completion of fabrication, the acceptable or approved fabricator shall submit a certificate of compliance to the owner or the owner's authorized agent or the registered design professional in responsible charge, ~~for submittal to the building official as specified in Section 1704.5~~ stating that the work was performed in accordance with the approved construction documents. The certificate of compliance shall also be made available to the Building Official upon request.

79. Section 1804.4.1; add Section 1804.4.1 to read as follows:

1804.4.1; Excavation and Grading Guidelines: Where it is practical, 80 percent of a lot or tract shall be graded to the fronting street gutter. Drainage on the portion of a lot or tract below curb level shall not drain across more that one lot or tract before entering an approved drainage way.

80. \*\*Section 2901.1; add a sentence to read as follows:

**[P] 2901.1 Scope.** *{existing text to remain}* The provisions of this Chapter are meant to work in coordination with the provisions of Chapter 4 of the International Plumbing Code. Should any conflicts arise between the two chapters, the Building Official shall determine which provision applies.

81. \*\*Section 2902.1; add a second paragraph to read as follows:

In other than E Occupancies, the minimum number of fixtures in Table 2902.1 may be lowered, if requested in writing, by the applicant stating reasons for a reduced number and approved by the Building Official.

82. \*\*Table 2902.1; add footnote f to read as follows:

f. Drinking fountains are not required in M Occupancies with an occupant load of 100 or less, B Occupancies with an occupant load of 25 or less, and for dining and/or drinking establishments.

83. \*\*Section 2902.1.3; add new Section 2902.1.3 to read as follows:

**2902.1.3 Additional fixtures for food preparation facilities.** In addition to the fixtures required in this Chapter, all food service facilities shall be provided with additional fixtures set out in this section.

**2902.1.3.1 Hand washing lavatory.** At least one hand washing lavatory shall be provided for use by employees that is accessible from food preparation, food dispensing and ware washing areas. Additional hand washing lavatories may be required based on convenience of use by employees.

**2902.1.3.2 Service sink.** In new or remodeled food service establishments, at least one service sink or one floor sink shall be provided so that it is conveniently located for the cleaning of mops or similar wet floor cleaning tool and for the disposal of mop water and similar liquid waste. The location of the service sink(s) and/or mop sink(s) shall be approved by the **<Jurisdiction's>** health department.

84. \*\*\*Section 3002.1 Hoistway Enclosure Protection. add exceptions to read as follows:

**Exceptions:**

1. Elevators wholly located within atriums complying with Section 404 shall not require hoistway enclosure protection.
2. Elevators in open or enclosed parking garages that serve only the parking garage, and complying with Sections 406.5 and 406.6, respectively, shall not require hoistway enclosure protection.

85. \*\*\*Section 3005.4 Machine rooms, control rooms, machinery spaces and control spaces.

Delete text as follows: ~~Elevator machine rooms, control rooms, control spaces and machinery spaces outside of but attached to a hoistway that have openings into the hoistway shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.~~

Revise text to read:

Elevator machine rooms, control rooms, control spaces and machinery spaces shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

[Remainder unchanged]

86. \*\*\*Section 3005.7 add a Section 3005.7 as follows:

**3005.7 Fire Protection in Machine rooms, control rooms, machinery spaces and control spaces.**

**3005.7.1 Automatic sprinkler system.** The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, except as otherwise permitted by Section 903.3.1.1.1 and as prohibited by Section 3005.7.2.1.

**3005.7.2.1 Prohibited locations.** Automatic sprinklers shall not be installed in machine rooms, elevator machinery spaces, control rooms, control spaces and elevator hoist-ways.

**3005.7.2.2 Sprinkler system monitoring.** The sprinkler system shall have a sprinkler control valve supervisory switch and water-flow initiating device provided for each floor that is monitored by the building's fire alarm system.

**3005.7.3 Water protection.** An approved method to prevent water from infiltrating into the hoistway enclosure from the operation of the automatic sprinkler system outside the elevator lobby shall be provided.

**3005.7.4 Shunt trip.** Means for elevator shutdown in accordance with Section 3005.5 shall not be

installed.

87. \*\*\*Section 3005.8 add Section 3005.8 as follows:

**3005.8 Storage.** Storage shall not be allowed within the elevator machine room, control room, machinery spaces and or control spaces. Provide approved signage at each entry to the above listed locations stating: "No Storage Allowed."

88. \*\*\*Section 3006.2, Hoistway opening protection required. Revise text as follows:

5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) 55 feet (16 764 mm) in height. The height of the hoistway shall be measured from the lowest floor at or above grade to the highest floors served by the hoistway.

89. \*\*Section 3109.1; change to read as follows:

**3109.1 General.** Swimming pools shall comply with the requirements of sections 3109.2 through 3109.5 and other applicable sections of this code and complying with applicable state laws.

## **AMENDMENTS TO THE 2015 INTERNATIONAL RESIDENTIAL CODE**

### **Sec. 22-55 Amendments to the International Residential Code.**

1. \*\*\*Section R101.1; Insert jurisdiction name as follows:

**R101.1 Title.** These regulations shall be known as the *Residential Code for One- and Two-family Dwellings* of the City of Bedford hereinafter referred to as "this code."

2. \*\*Section R102.4; change to read as follows:

**R102.4 Referenced codes and standards.** The codes, when specifically adopted, and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 or the Electrical Code shall mean the Electrical Code as adopted.

3. \*\*Section R104.10.1 Flood Hazard areas; delete this section.

4. \*\*Section R105.2 Work exempt from permit; change to read as follows:

Section R105.2 (1): Playhouses, tool storage and similar uses, provided the floor area does not exceed 50 square feet.

Section R105.2 (2.); Delete

5. \*\*Section R105.3.1.1& R106.1.4; delete these sections.

6. \*\*Section R110 (R110.1 through R110.5); delete the section.

7. \*\*Section R202; change definition of "Townhouse" to read as follows:

**TOWNHOUSE.** A single-family dwelling unit constructed in a group of three or more attached units separated by property lines in which each unit extends from foundation to roof and with a yard or public way on at least two sides.



8. \*\*Table R301.2 (1); fill in as follows:

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY <sup>i</sup>	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP <sup>e</sup>	ICE BARRIER UNDER- LAYMENT <sup>h</sup>	FLOOD HAZARDS <sup>g</sup>	AIR FREEZING INDEX <sup>i</sup>	MEAN ANNUAL TEMP <sup>j</sup>
	SPEED <sup>d</sup> (MPH)	Topographic Effects <sup>k</sup>	Special Wind Region <sup>l</sup>	Windborne Debris Zone <sup>m</sup>		Weathering <sup>a</sup>	Frost Line Depth <sup>b</sup>	Termite <sup>c</sup>					
5 lb/ft	115 (3 sec-gust)/ 76 fastest mile	No	No	No	A	Moderate	6"	Very Heavy	22 <sup>o</sup> F	No	Local Code	150	64.9 <sup>o</sup> F

9. \*\*Section R302.1; add exception #6 to read as follows:

**Exceptions:**

6. Open non-combustible carport structures may be constructed when also approved within adopted ordinances.

10. \*\*Section R302.3; add Exception #3 to read as follows:

**Exceptions:**

3. Two-family dwelling units that are also divided by a property line through the structure shall be separated as required for townhouses.

11. \*\*\*Section R302.5.1; change to read as follows:

**R302.5.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors ~~equipped with a self-closing device.~~

12. \*\*Section R303.3, Exception; amend to read as follows:

**Exception:** {existing text unchanged} Exhaust air from the space shall be exhaust out to the outdoors unless the space contains only a water closet, a lavatory, or water closet and a lavatory may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

13. Section R313 Automatic Fire Sprinkler Systems. Delete subsections in their entirety.

14. \*\*\*Section R315.2.2 Alterations, repairs and additions. Amend to read as follows:

**Exception:**

2. Installation, alteration or repairs of electrical powered {remaining text unchanged}

15. \*\*Section R322 Flood Resistant Construction. Deleted Section.

16. \*\*\*Section R326 Swimming Pools, Spas and Hot Tubs. Amended to read as follows:

**R326.1 General.** The design and construction of pools and spas shall comply with the ~~International Swimming Pool and Spa Code~~ **2015 IRC Appendix Q. and AQ Swimming Pools, Spas and Hot Tubs.**

17. \*\*Section R401.2, amended by adding a new paragraph following the existing paragraph to read as follows;

**Section R401.2. Requirements.** *{existing text unchanged}* ...

Every foundation and/or footing, or any size addition to an existing post-tension foundation, regulated by this code shall be designed and sealed by a Texas-registered engineer.

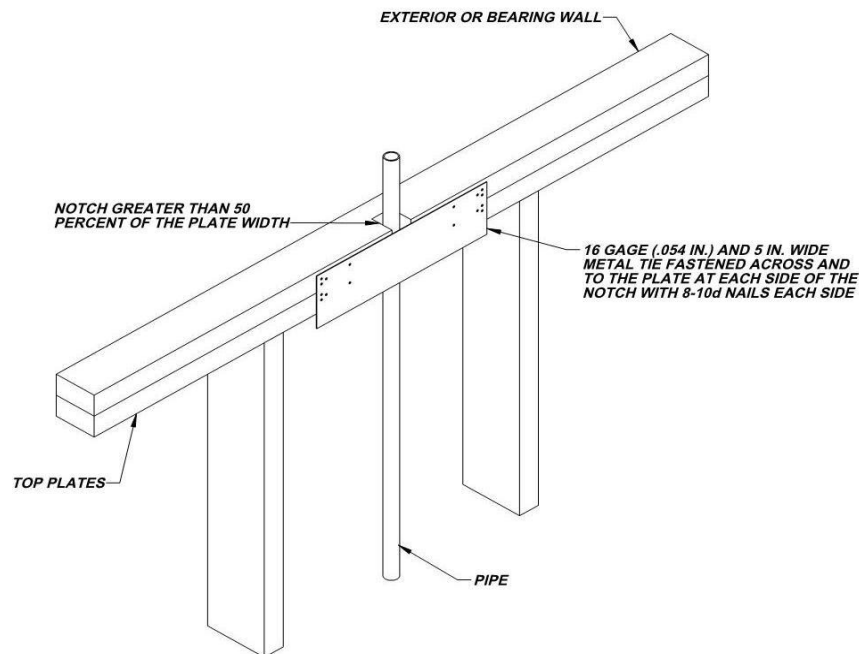
18. Section R401.3.1; add Section R401.3.1 to read as follows:

R401.3.1; Excavation and Grading Guidelines: Where it is practical, 80 percent of a lot or tract shall be graded to the fronting street gutter. Drainage on the portion of a lot or tract below curb level shall not drain across more that one lot or tract before entering an approved drainage way.

19. \*\*Section R602.6.1; amend the following:

**R602.6.1 Drilling and notching of top plate.** When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 Ga) and ~~1 ½ inches (38 mm)~~ 5 inches (127 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d (0.148 inch diameter) having a minimum length of 1 ½ inches (38 mm) at each side or equivalent. Fasteners will be offset to prevent splitting of the top plate material. The metal tie must extend a minimum of 6 inches past the opening. See figure R602.6.1. *{remainder unchanged}*

20. \*\*Figure R602.6.1; delete the figure and insert the following figure:



21. \*\*Section R703.8.4.1; add a second paragraph to read as follows:

In stud framed exterior walls, all ties shall be anchored to studs as follows:

1. When studs are 16 in (407 mm) o.c., stud ties shall be spaced no further apart than 24 in (737 mm) vertically starting approximately 12 in (381 mm) from the foundation; or
2. When studs are 24 in (610 mm) o.c., stud ties shall be spaced no further apart than 16 in (483 mm) vertically starting approximately 8 in (254 mm) from the foundation.

22. \*\*Section R902.1; Amend and add exception #5 to read as follows:

**R902.1 Roofing covering materials.** Roofs shall be covered with materials as set forth in Sections R904 and R905. Class A, B, or C roofing shall be installed ~~in areas designated by law~~

as requiring their use or when the edge of the roof is less than 3 feet from a lot line. {remainder unchanged}

**Exceptions:**

5. Non-classified roof coverings shall be permitted on one-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed (area defined by jurisdiction).

23. \*\*\* Chapter 11 [RE] – Energy Efficiency is deleted in its entirety and replaced with the following:

**N1101.1 Scope.** This chapter regulates the energy efficiency for the design and construction of buildings regulated by this code.

**N1101.2 Compliance.** Compliance shall be demonstrated by meeting the requirements of the residential provisions of 2015 International Energy Conservation Code.

24. \*\*Section M1305.1.3; change to read as follows:

**M1305.1.3 Appliances in attics.** Attics containing appliances shall be provided . . . {bulk of paragraph unchanged} . . . sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger and large enough to allow removal of the largest appliance. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb (136 kg) capacity.
3. An access door from an upper floor level.

**Exceptions:**

1. The passageway and level service space are not required where the appliance can be serviced and removed through the required opening.
2. Where the passageway is unobstructed...{remaining text unchanged}

25. \*\*Section M1411.3; change to read as follows:

**M1411.3 Condensate disposal.** Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved place of disposal a sanitary sewer through a trap, by means of a direct or indirect drain. {remaining text unchanged}

26. \*\*Section M1411.3.1, Items 3 and 4; add text to read as follows:

**M1411.3.1 Auxiliary and secondary drain systems.** {bulk of paragraph unchanged}

2. An auxiliary drain pan... {bulk of text unchanged}... with Item 1 of this section. A water level detection device may be installed only with prior approval of the building official.
3. A water level detection device... {bulk of text unchanged}... overflow rim of such pan. A water level detection device may be installed only with prior approval of the building official.

27. \*\*Section M1411.3.1.1; add text to read as follows:

**M1411.3.1.1 Water-level monitoring devices.** On down-flow units ...{bulk of text unchanged}... installed in the drain line. A water level detection device may be installed only with prior approval of the building official.

28. \*\*M1503.4 Makeup Air Required Amend and add exception as follows:

**M1503.4 Makeup air required.** Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minute (0.19 m<sup>3</sup>/s) shall be provided with makeup air at a rate approximately equal to the difference between the exhaust air rate and 400 cubic feet per minute. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

Exception: Where all appliances in the house are of sealed combustion, power-vent, unvented, or electric, the exhaust hood system shall be permitted to exhaust up to 600 cubic feet per minute (0.28 m<sup>3</sup>/s) without providing makeup air. Exhaust hood systems capable of exhausting in excess of 600 cubic feet per minute (0.28 m<sup>3</sup>/s) shall be provided with a makeup air at a rate approximately equal to the difference between the exhaust air rate and 600 cubic feet per minute.

29. \*\*Section M2005.2; change to read as follows:

**M2005.2 Prohibited locations.** Fuel-fired water heaters shall not be installed in a room used as a storage closet. Water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that *combustion air* will not be taken from the living space. Access to such enclosure may be from the bedroom or bathroom when through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the *International Energy Conservation Code* and equipped with an approved self-closing device. Installation of direct-vent water heaters within an enclosure is not required

30. \*\*Section G2408.3 (305.5); delete.

31. \*\*Section G2415.2.1 (404.2.1); add a second paragraph to read as follows:

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an approved tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING: 1/2 to 5 psi gas pressure - Do Not Remove"

32. \*\*Section G2415.2.2 (404.2.2); add an exception to read as follows:

**Exception:** Corrugated stainless steel tubing (CSST) shall be a minimum of 1/2" (18 EDH).

33. \*\*Section G2415.12 (404.12); change to read as follows:

**G2415.12 (404.12) Minimum burial depth.** Underground *piping systems* shall be installed a minimum depth of ~~42 inches (305 mm)~~ 18 inches (457 mm) below grade, ~~except as provided for in Section G2415.12.1.~~

34. \*\*Section G2417.1 (406.1); change to read as follows:

**G2417.1 (406.1) General.** Prior to acceptance and initial operation, all *piping* installations shall be inspected and *pressure tested* to determine that the materials, design, fabrication, and installation practices comply with the requirements of this *code*. The permit holder shall make the applicable tests prescribed in Sections 2417.1.1 through 2417.1.5 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the building official when the piping system is ready for testing. The equipment, material, power and labor necessary for the inspections and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

35. \*\*Section G2417.4; change to read as follows:

**G2417.4 (406.4) Test pressure measurement.** Test pressure shall be measured with a monometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. ~~Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure.~~

36. \*\*Section G2417.4.1; change to read as follows:

**G2417.4.1 (406.4.1) Test pressure.** The test pressure to be used shall be no less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge, irrespective of design pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe. For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one half inches (3 ½"), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 ½"), a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing

37. \*\*Section G2417.4.2; change to read as follows:

**G2417.4.2 (406.4.2) Test duration.** The test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than 10-fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the Building Official, but in no case for less than thirty (30) minutes.

38. \*\*Section G2420.1 (406.1); add Section G2420.1.4 to read as follows:

**G2420.1.4 Valves in CSST installations.** Shutoff valves installed with corrugated stainless steel (CSST) piping systems shall be supported with an approved termination fitting, or equivalent support, suitable for the size of the valves, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the valve. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's piping, fittings, and valves between anchors. All valves and supports shall be designed and installed so they will not be disengaged by movement of the supporting piping.

39. \*\*Section G2420.5.1 (409.5.1); add text to read as follows:

**G2420.5.1 (409.5.1) Located within the same room.** The shutoff valve ...*{bulk of paragraph unchanged}*... in accordance with the appliance manufacturer's instructions. A secondary shutoff valve must be installed within 3 feet (914 mm) of the firebox if appliance shutoff is located in the firebox.

40. \*\*Section G2421.1 (410.1); add text and Exception to read as follows:

**G2421.1 (410.1) Pressure regulators.** A line pressure regulator shall be ... *{bulk of paragraph*

*unchanged*}... *approved* for outdoor installation. Access to *regulators* shall comply with the requirements for access to *appliances* as specified in Section M1305.

**Exception:** A passageway or level service space is not required when the *regulator* is capable of being serviced and removed through the required *attic* opening.

41. \*\*Section G2422.1.2.3 (411.1.3.3); delete Exception 1 and Exception 4.

42. \*\*Section G2445.2 (621.2); add Exception to read as follows:

**G2445.2 (621.2) Prohibited use.** One or more *unvented room heaters* shall not be used as the sole source of comfort heating in a *dwelling unit*.

**Exception:** Existing *approved unvented room heaters* may continue to be used in *dwelling units*, in accordance with the *code* provisions in effect when installed, when *approved* by the *Building Official* unless an unsafe condition is determined to exist as described in *International Fuel Gas Code* Section 108.7 of the *Fuel Gas Code*.

43. \*\*Section G2448.1.1 (624.1.1); change to read as follows:

**G2448.1.1 (624.1.1) Installation requirements.** The requirements for *water heaters* relative to access, sizing, *relief valves*, drain pans and scald protection shall be in accordance with this *code*.

44. Section 2801.4.1; Add Section 2801.4.1 to read as follows:

**2801.4.1 Installation in new construction.** For new construction, water heaters shall not be installed in attics.

45. \*\*\* Section P2801.6.1; change to read as follows:

**Section P2801.6.1 Pan size and drain.** The pan shall be not less than 1 1/2 inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than 3/4 inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4. Multiple pan drains may terminate to a single discharge piping system when *approved* by the administrative authority and permitted by the manufactures installation instructions and installed with those instructions.

46. Section P2801.6.1.1; add Section 28.1.6.1.1 Pan Alarm to read as follows:

**28.1.6.1.1 Pan Alarm.** Where a pan is required by this code, an audible alarm for moisture detection shall be installed within the pan.

Exception: Water Heaters installed in a garage with required discharge piping and disposal.

47. Section P2801.9; Add Section P2801.9 to read as follows:

**Section P2801.9 Auto shut-off valve.** When unable to provide proper disposal for the pan or temperature pressure relief as required by section P2804.6.1, the cold water supply line to each hot water storage tank or water heater shall be provided with an approved automatic shutoff device.

Exception: Alternative means of disposal may be approved by the building official.

48. \*\*\* Section P2804.6.1; change to read as follows:

**Section P2804.6.1 Requirements for discharge piping.** The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap ~~located in the same room as the water heater.~~
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

**Exception:** Multiple relief devices may be installed to a single T & P discharge piping system when approved by the administrative authority and permitted by the manufactures installation instructions and installed with those instructions.

5. Discharge ~~to the floor,~~ to an indirect waste receptor or to the outdoors.

[remainder unchanged]

49. \*\*Section P2801.7; add Exception to read as follows:

**Exceptions:**

1. Electric Water Heater.

50. \*\*Section P2902.5.3; change to read as follows:

**P2902.5.3 Lawn irrigation systems.** The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

51. Section P2902.5.3.1; Add section to read as follows:

P2902.5.3.1: Irrigation System Rain and Freeze Sensors.

1. Any irrigation system installed within the City must be equipped with rain and freeze sensors.

52. \*\*\*Section P3003.9.2; delete exception, change to read as follows:

**P3003.9. Solvent cementing.** Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent cement joints shall be permitted above or below ground.

Exception: A primer is not required where both of the following conditions apply:

1. ~~The solvent cement used is third-party certified as conforming to ASTM D 2564~~
2. ~~The solvent cement is used only for joining PVC drain, waste, and vent pipe and fittings in not pressure applications in sizes up to and including 4 inches (102mm) in diameter.~~

53. \*\*Section P3111; delete.

54. \*\*Section P3112.2; delete and replace with the following:

**P3112.2 Installation.** Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the drainboard height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than six (6) inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings shall be used on all parts of the vent below the floor level and a minimum slope of one-quarter (1/4) inch per foot (20.9 mm/m) back to the drain shall be maintained. The return bend used under the drain-board shall be a one (1) piece fitting or an assembly of a forty-five (45) degree (0.79 radius), a ninety (90) degree (1.6 radius) and a forty-five (45) degree (0.79 radius) elbow in the order named. Pipe sizing shall be as elsewhere required in this Code. The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

55. \*\*\*Appendix Q Reserved. Amended to read as follows:

**Appendix Q. Swimming Pools, Spas and Hot Tubs.**

56. **SECTION AQ101 GENERAL**

**AQ101.1 General.**

The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one- or two-family dwelling.

**AQ101.2 Pools in flood hazard areas.**

Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools and in-ground pools that involve placement of fill, shall comply with Section AQ101.2.1 or AQ101.2.2.

Exception: Pools located in riverine flood hazard areas which are outside of designated floodways.

**AQ101.2.1 Pools located in designated floodways.**

Where pools are located in designated floodways, documentation shall be submitted to the building official which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction.

**AQ101.2.2 Pools located where floodways have not been designated.**

Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

57. **SECTION AQ102 DEFINITIONS**

**AQ102.1 General.**

For the purposes of these requirements, the terms used shall be defined as follows and as set forth in [Chapter 2](#).

**ABOVE-GROUND/ON-GROUND POOL.** See "Swimming pool."

**BARRIER.** A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

**HOT TUB.** See "Swimming pool."

**IN-GROUND POOL.** See "Swimming pool."

**RESIDENTIAL.** That which is situated on the premises of a detached one- or two-family dwelling.



or a one-family townhouse not more than three stories in height.

**SPA, NONPORTABLE. See "Swimming pool."**

**SPA, PORTABLE.** A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

**SWIMMING POOL.** Any structure intended for swimming or recreational bathing that contains water more than 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs and spas.

**SWIMMING POOL, INDOOR.** A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

**SWIMMING POOL, OUTDOOR.** Any swimming pool which is not an indoor pool.

58. **SECTION AG103 SWIMMING POOLS**

**AQ103.1 In-ground pools.**

In-ground pools shall be designed and constructed in compliance with ANSI/NSPI-5.

**AQ103.2 Above-ground and on-ground pools.**

Above-ground and on-ground pools shall be designed and constructed in compliance with ANSI/NSPI-4.

**AQ103.3 Pools in flood hazard areas.**

In flood hazard areas established by Table R301.2(1), pools in coastal high-hazard areas shall be designed and constructed in compliance with ASCE 24.

59. **SECTION AQ104 SPAS AND HOT TUBS**

**AQ104.1 Permanently installed spas and hot tubs.**

Permanently installed spas and hot tubs shall be designed and constructed in compliance with ANSI/NSPI-3.

**AQ104.2 Portable spas and hot tubs.**

Portable spas and hot tubs shall be designed and constructed in compliance with ANSI/NSPI-6.

60. **SECTION AQ105 BARRIER REQUIREMENTS**

**AQ105.1 Application.**

The provisions of this appendix shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

**AQ105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be surrounded by a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219mm) above grade measured on the side of the barrier, which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51mm) measured on the side of the barrier, which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102mm) sphere.

3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.
  - 5.1 Where the horizontal members cannot be located on the swimming pool side of the fence and the distance between the tops of the horizontal members are less than 45 inches, the fence must have approved anti-climb devices mounted on top of the horizontal members, or vertical members on both sides constructed to meet the intended safety standards in a manner equal to but not less than the minimum code requirements.
6. Maximum mesh size for chain link fences shall be a 2.25-inch (57 mm) square unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to not more than 1.75 inches (44 mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1.75 inches (44 mm).
8. Access gates shall comply with the requirements of Section AQ105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:
  - 8.1 The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and
  - 8.2. The gate and barrier shall have not opening greater than 0.5 inch (13 mm) within 18 inches (457 mm) of the release mechanism.
9. Where a wall of a dwelling serves a part of the barrier one of the following conditions shall be met:
  - 9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F1346; or
  - 9.2. Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and labeled in accordance with UL 2017. The deactivation switch (es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or
  - 9.3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable as long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.

10. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then:

10.1. The ladder or steps shall be capable of being secured, locked or removed to prevent access, or

10.2. The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AQ105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch diameter (102 mm) sphere.

**AQ105.3 Indoor swimming pool.** Walls surrounding an indoor swimming pool shall comply with Section AQ105.2, Item 9.

**AQ105.4 Prohibited locations.** Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb them.

**AQ105.5 Barrier exceptions.** Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AQ107, shall be exempt from the provisions of this appendix

61. **SECTION AQ106 ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS**

**AQ106.1 General.**

Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

62. **SECTION AQ107 ABBREVIATIONS**

**AQ107.1 General.**

ANSI—American National Standards Institute  
11 West 42nd Street  
New York, NY 10036

APSP—Association of Pool and Spa Professionals  
NSPI—National Spa and Pool Institute  
2111 Eisenhower Avenue  
Alexandria, VA 22314

ASCE—American Society of Civil Engineers  
1801 Alexander Bell Drive  
Reston, VA 98411-0700

ASTM—ASTM International  
100 Barr Harbor Drive  
West Conshohocken, PA 19428

UL—Underwriters Laboratories, Inc.  
333 ingsten Road  
Northbrook, IL 60062-2096

63. **SECTION AQ108 REFERENCED STANDARDS**

**AQ108.1 General.**

ANSI/NSPI-3—99            Standard for Permanently Installed Residential Spas AQ104.1

ANSI/NSPI-4—99            Standard for Above-ground/On-ground Residential Swimming Pools  
AQ103.2

ANSI/NSPI-5—03            Standard for Residential In-ground Swimming Pools AQ103.1

ANSI/NSPI-6—99            Standard for Residential Portable Spas AQ104.2

ANSI/APSP-7—06           Standard for Suction Entrapment Avoidance in Swimming Pools,  
Wading Pools, Spas, Hot Tubs and Catch Basins AQ106.1

ASCE/SEI-24—05           Flood-resistant Design and Construction AQ103.3

ASTM F 1346—91 (2003) Performance Specification for Safety Covers and Labeling  
Requirements for All Covers for Swimming Pools Spas and Hot Tubs AQ105.2, AQ105.5

UL 2017—2000            Standard for General-purpose Signaling Devices and Systems—with  
revisions through June 2004 AQ105.2

## **AMENDMENTS TO THE 2015 INTERNATIONAL MECHANICAL CODE**

### **Sec. 22-56 Amendments to the International Mechanical Code.**

1. Section 101.1; Insert: City of Bedford
2. ~~\*\*Section 102.8; change to read as follows:~~

**102.8 Referenced Codes and Standards.** The codes and standards referenced herein shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the adopted amendments. Any reference to NFPA 70 or the *National Electrical Code* (NEC) shall mean the Electrical Code as adopted.

3. Section 106.5.2; insert “Appendix A Schedule of fees”
4. Section 106.5.3; Change to read as follows:

**106.5.3: Fee refunds.** The code official shall authorize the refunding of fees as provided for in the “Appendix A Schedule of fees”

5. Section 108.4; Change to read as follows:

108.4: Violation Penalties. Any person violating or failing to comply with any provision or requirement of this article shall be subject to the penalties provided for in Article I, Chapter 22 of the code of ordinances.

6. ~~\*\*Section 306.3; change to read as follows:~~

**306.3 Appliances in Attics.** Attics containing appliances shall be provided . . . *{bulk of paragraph unchanged}* . . . side of the appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are not large enough to allow removal of the largest appliance. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb. (136 kg) capacity.
3. An access door from an upper floor level.

4. Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

**Exceptions:**

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed... *{remainder of section unchanged}*

7. \*\*Section 306.5; change to read as follows:

**306.5 Equipment and Appliances on Roofs or Elevated Structures.** Where *equipment* requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, ~~an a~~ a permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 8-12 feet (2438 mm) to the finish grade or floor level below and shall extend to the *equipment* and appliances' level service space. Such access shall . . . *{bulk of section to read the same}* . . . on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). ... *{bulk of section to read the same}*.

8. \*\*Section 306.5.1; change to read as follows:

**306.5.1 Sloped Roofs.** Where appliances, *equipment*, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

9. \*\*Section 306; add Section 306.6 to read as follows:

**306.6 Water Heaters Above Ground or Floor.** When the mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

**Exception:** A maximum 10 gallon water heater (or larger with approval) is capable of being accessed through a lay-in ceiling and the water heater installed is not more than ten (10) feet (3048 mm) above the ground or floor level and may be reached with a portable ladder.

10. \*\*Section 307.2.3; amend item 2 to read as follows:

2. A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection. However, the conspicuous point shall not create a hazard such as dripping over a walking surface or other areas so as to create a nuisance.

11. \*\*Section 403.2.1; add an item 5 to read as follows:

5. Toilet rooms within private dwellings that contain only a water closet, lavatory, or combination thereof may be ventilated with an *approved* mechanical recirculating fan or similar device designed to remove odors from the air.

12. \*\*Section 501.3; add an exception to read as follows:

**501.3 Exhaust Discharge.** The air removed by every mechanical exhaust system shall be discharged outdoors at a point where it will not cause a public nuisance and not less than the distances specified in Section 501.3.1. The air shall be discharged to a location from which it cannot again be readily drawn in by a ventilating system. Air shall not be exhausted into an attic, crawl space, or be directed onto walkways.

**Exceptions:**

1. Whole-house ventilation-type attic fans shall be permitted to discharge into the attic space of dwelling units having private attics.
2. Commercial cooking recirculating systems.
3. Where installed in accordance with the manufacturer's instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled domestic ductless range hoods shall not be required to discharge to the outdoors.
4. Toilet room exhaust ducts may terminate in a warehouse or shop area when infiltration of outside air is present.

13. \*\*Section 607.5.1; change to read as follows:

**607.5.1 Fire Walls.** Ducts and air transfer openings permitted in fire walls in accordance with Section 705.11 of the International Building Code shall be protected with listed fire dampers installed in accordance with their listing. For hazardous exhaust systems see Section 510.1-510.9 IMC.

**AMENDMENTS TO THE 2015 INTERNATIONAL PLUMBING CODE**

**Sec. 22-58 Amendments to the International Plumbing Code.**

1. Section 101.1; Insert: City of Bedford
2. \*\*Table of Contents, Chapter 7, Section 714; change to read as follows:

714     Engineered ~~Computerized~~ Drainage Design . . . . . 69

3. \*\*Section 102.8; change to read as follows:

**102.8 Referenced codes and standards.** The codes and standards referenced in this code shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference. Where the differences occur between provisions of this code and the referenced standards, the provisions of this code shall be the minimum requirements. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the adopted amendments. Any reference to NFPA 70 or the *National Electrical Code* (NEC) shall mean the Electrical Code as adopted.

4. \*\*Sections 106.6.2 and 106.6.3; change to read as follows:

**106.6.2 Fee schedule.** The fees for all plumbing work shall be as Appendix A Schedule of Fees adopted by resolution of the City of Bedford.

**106.6.3 Fee Refunds.** The code official shall establish a policy for authorizing the refunding of fees.

5. Section 108.4; Change to read as follows:

**108.4: Violation Penalties.** Any person violating or failing to comply with any provision or requirement of this article shall be subject to the penalties provided for in Article I, Chapter 22 of the code of ordinances.

6. \*\*Section 109; delete entire section and insert the following:

**SECTION 109  
MEANS OF APPEAL**

**109.1 Application for appeal.** Any person shall have the right to appeal a decision of the code official to the board of appeals established by ordinance. The board shall be governed by the enabling ordinance.

7. \*\*Section 305.4.1; change to read as follows:

**305.4.1 Sewer depth.** ~~Building sewers that connect to private sewage disposal systems shall be a minimum of [number] inches (mm) below finished grade at the point of septic tank connection.~~ Building sewers shall be a minimum of 12 inches (304 mm) below grade.

8. \*\*Section 305.7; change to read as follows:

**305.7 Protection of components of plumbing system.** Components of a plumbing system installed within 3 feet along alleyways, driveways, parking garages or other locations in a manner in which they could be exposed to damage shall be recessed into the wall or otherwise protected in an *approved* manner.

9. \*\*Section 314.2.1; change to read as follows:

**314.2.1 Condensate disposal.** Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an *approved* place of disposal. ... {text unchanged} ... Condensate shall not discharge into a street, alley, sidewalk, rooftop, or other areas so as to cause a nuisance.

10. \*\*Section 409.2; change to read as follows:

**409.2 Water connection.** The water supply to a commercial dishwashing machine shall be protected against backflow by an air gap or backflow preventer in accordance with Section 608. (Remainder of section unchanged)

11. \*\*Section 412.4; change to read as follows:

**412.4 Required location for floor drains** ~~Public laundries and central washing facilities.~~ Floor drains shall be installed in the following areas.

1. In public coin-operated laundries and in the central washing facilities of multiple family dwellings, the rooms containing automatic clothes washers shall be provided with floor drains located to readily drain the entire floor area. Such drains shall have a minimum outlet of not less than 3 inches (76 mm) in diameter.
2. Commercial kitchens. In lieu of floor drains in commercial kitchens, the code official may accept floor sinks.
3. Public restrooms.

12. \*\*Section 419.3; change to read as follows:

**419.3 Surrounding material.** Wall and floor space to a point 2 feet (610 mm) in front of a urinal lip and 4 feet (1219 mm) above the floor and at least 2 feet (610 mm) to each side of the urinal shall be waterproofed with a smooth, readily cleanable, hard, nonabsorbent material.

13. \*\*\*Section 502.3; change to read as follows:

**502.3 Appliances in attics.** Attics containing a water heater shall be provided . . . {bulk of paragraph unchanged} . . . side of the water heater. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions be not less than 20 inches by 30 inches(508mm by 762mm) where such dimensions are large enough to allow removal of the water heater. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb (136 kg) capacity.
3. An access door from an upper floor level.
4. Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

Exceptions:

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed... {remainder of section unchanged}

14. Section 502.3.1; Add Section 502.3.1 to read as follows:

**502.3.1 Installation in new construction.** For new construction, water heaters shall not be installed in attics.

15. \*\*Section 502.6; add Section 502.6 to read as follows:

**502.6 Water heaters above ground or floor.** When the attic, roof, mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

**Exception:** A max 10 gallon water heater (or larger with approval) is capable of being accessed through a lay-in ceiling and a water heater is installed is not more than ten (10) feet (3048 mm) above the ground or floor level and may be reached with a portable ladder.

16. Section 503.1.1; Add Section 503.1.1 to read as follows:

**Section 503.1.1 Auto shut-off valve.** When unable to provide proper disposal for the pan or temperature pressure relief as required by section 504, the cold water supply line to each hot water storage tank or water heater shall be provided with an approved automatic shutoff device.

*Exception: Alternative means of disposal may be approved by the building official.*

17. \*\*Section 504.6; change to read as follows:

**504.6 Requirements for discharge piping.** The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:



1. Not be directly connected to the drainage system.
2. Discharge through an air gap. ~~located in the same room as the water heater.~~
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

**Exception:** Multiple relief devices may be installed to a single T & P discharge piping system when approved by the administrative authority and permitted by the manufactures installation instructions and installed with those instructions.

5. Discharge ~~to the floor,~~ to an indirect waste receptor or to the outdoors.
  6. Discharge in a manner that does not cause personal injury or structural damage.
  7. Discharge to a termination point that is readily observable by the building occupants.
  8. Not be trapped.
  9. Be installed so as to flow by gravity.
  10. Terminate not more than 6 inches above and not less than two times the discharge pipe diameter above the floor or flood level rim of the waste receptor.
  11. Not have a threaded connection at the end of such piping.
  12. Not have valves or tee fittings.
  13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and *approved* for such use in accordance with ASME A112.4.1.
18. \*\*\*Section 504.7.1; change to read as follows:

**Section 504.7.1 Pan size and drain to read as follows:** The pan shall be not less than 11/2 inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than 3/4 inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4. Multiple pan drains may terminate to a single discharge piping system when approved by the administrative authority and permitted by the manufactures installation instructions and installed with those instructions.

19. Section 504.7.3; add Section 504.7.3 Pan Alarm to read as follows:

**504.7.3 Pan Alarm.** Where a pan is required by this code, an audible alarm for moisture detection shall be installed within the pan.

Exception: Water Heaters installed in a garage with required discharge piping and disposal.

20. \*\*Section 604.4; add Section 604.4.1 to read as follows:

**604.4.1 State maximum flow rate.** Where the State mandated maximum flow rate is more restrictive than those of this section, the State flow rate shall take precedence.

21. \*\*Section 606.1; delete items #4 and #5.

22. \*\*Section 606.2; change to read as follows:

**606.2 Location of shutoff valves.** Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one and two-family residential occupancies, and other than in individual sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar occupancies.
2. ~~On the water supply pipe to each sillcock.~~
3. On the water supply pipe to each appliance or mechanical equipment.

23. \*\*Section 608.1; change to read as follows:

**608.1 General.** A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from non-potable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to applicable local regulations, Table 608.1, ~~except and~~ as specifically stated in Sections 608.2 through 608.16.10.

24. \*\*Section 608.16.5; change to read as follows:

**608.16.5 Connections to lawn irrigation systems.**

The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

25. Section 608.16.5.1; Add section to read as follows:

**608.16.5.1: Irrigation System Rain and Freeze Sensors.**

1. Any irrigation system installed within the City must be equipped with rain and freeze sensors.

26. \*\*Section 608.17; change to read as follows:

**608.17 Protection of individual water supplies.** An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with applicable local regulations. Installation shall be in accordance with Sections 608.17.1 through 608.17.8.

27. \*\*Section 610.1; add exception to read as follows:

**610.1 General.** New or repaired potable water systems shall be purged of deleterious matter and disinfected prior to utilization. The method to be followed shall be that prescribed by the health authority or water purveyor having jurisdiction or, in the absence of a prescribed method, the procedure described in either AWWA C651 or AWWA C652, or as described in this section. This requirement shall apply to "on-site" or "in-plant" fabrication of a system or to a modular portion of a system.

1. The pipe system shall be flushed with clean, potable water until dirty water does not appear at the points of outlet.
2. The system or part thereof shall be filled with a water/chlorine solution containing at least 50 parts per million (50 mg/L) of chlorine, and the system or part thereof shall be valved off and allowed to stand for 24 hours; or the system or part thereof shall be filled with a

water/chlorine solution containing at least 200 parts per million (200 mg/L) of chlorine and allowed to stand for 3 hours.

3. Following the required standing time, the system shall be flushed with clean potable water until the chlorine is purged from the system.
4. The procedure shall be repeated where shown by a bacteriological examination that contamination remains present in the system.

**Exception:** With prior approval the Code Official may wave this requirement when deemed un-necessary. by the Code Official.

28. Section 703.6; Delete

29. \*\*\*Section 704.5; added to read as follows:

**704.5 Single stack fittings.** Single stack fittings with internal baffle, PVC schedule 40 or cast iron single stack shall be designed by a registered engineer and comply to a national recognized standard.

30. \*\*\*Section 705.11.2; change to read as follows:

**705.11.2 Solvent cementing.** Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent cement joints shall be permitted above or below ground.

~~Exception: A primer is not required where both of the following conditions apply:~~

- ~~1. The solvent cement used is third-party certified as conforming to ASTM D 2564~~
- ~~2. The solvent cement is used only for joining PVC drain, waste, and vent pipe and fittings in not pressure applications in sizes up to and including 4 inches (102mm) in diameter.~~

31. \*\*Section 712.5; add Section 712.5 to read as follows:

**712.5 Dual Pump System.** All sumps shall be automatically discharged and, when in any "public use" occupancy where the sump serves more than 10 fixture units, shall be provided with dual pumps or ejectors arranged to function independently in case of overload or mechanical failure. For storm drainage sumps and pumping systems, see Section 1113.

32. \*\*Section 714, 714.1; change to read as follows:

## **SECTION 714**

### **ENGINEERED DRAINAGE DESIGN**

**714.1 Design of drainage system.** The sizing, design and layout of the drainage system shall be ~~permitted to be~~ designed by a registered engineer using approved computer design methods.

33. \*\*\*Section 804.2; added to read as follows:

**804.2 Special waste pipe, fittings, and components.** Pipes, fittings, and components receiving or intended to receive the discharge of any fixture into which acid or corrosive chemicals are placed shall be constructed of CPVC, high silicone iron, PP, PVDF, chemical resistant glass, or glazed ceramic materials.

34. \*\*Section 903.1; change to read as follows:

**903.1 Roof extension.** Open vent pipes that extend through a roof shall terminate not less than six (6) inches (152 mm) above the roof. Where a roof is to be used for assembly or as a promenade, observation deck, sunbathing deck or similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof.

35. \*\*Section 917 Single stack vent system. Delete entire section.

36. \*\*Section 1002.10; delete.

37. Table 1003.3.4.1, Capacity of Grease Interceptors: replace table to read as follows:

All food establishments having a food disposal or discharge of more than 50 gallons per minute shall discharge into an oil & grease interceptor.

Establishments with a discharge of 50 gallons per minute or less shall discharge into at least a 100-pound size grease trap. An approved-type grease interceptor or grease trap complying with the provisions of this subsection shall be installed in the waste line leading from sinks, drains, and other fixtures or equipment in establishments such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, sanitarium, factory or school kitchens, or other establishments where grease may be introduced into the drainage or sewage system in quantities that can affect line stoppage or hinder sewage treatment or private sewage disposal when grease interceptors are required. A grease trap is not required for individual dwelling units or for any private living quarters.

#### Grease Interceptors

Concrete	- Shall be composed of one part Portland cement and five parts aggregate. - Reinforcement bars deformed number four bars on 18-inch centers.
Manholes	- Cast iron frame with 20-inch cover.
Vents	- Four-inch sanitary vent may be reduced to two inches if interceptor is connected to a properly vented sewer or waste line within 25 feet. - Relief vents shall be two inches between compartments and to atmosphere above roof, and inside building.
Capacity	- The figures below are approximates: 100 cubic feet holding 750 gallons retention capacity.
Cleanout	- Should be two-way located as near as possible to the interceptor on outflow line above seal.

38. Section 1003.10.; change to read as follows:

**1003.10 Access and maintenance of interceptors and separators.** Interceptors and separators shall be installed outside and below ground of the facility it serves. Access shall be provided to each interceptor and separator for service and *(remainder of text unchanged)*.

39. \*\*Section 1101.8; change to read as follows:

**1101.8 Cleanouts required.** Cleanouts ~~or manholes~~ shall be installed in the ~~building~~ storm drainage system and shall comply with the provisions of this code for sanitary drainage pipe cleanouts.

**Exception:** ~~Subsurface drainage system~~

40. \*\*Section 1106.1; change to read as follows:

**1106.1 General.** The size of the vertical conductors and leaders, building storm drains, building storm sewers, and any horizontal branches of such drains or sewers shall be based on six (6) inches per hour ~~the 100-year hourly rainfall rate indicated in Figure 1106.1 or on other rainfall rates determined from approved local weather data.~~

41. \*\*Section 1108.3; change to read as follows:

**1108.3 Sizing of secondary drains.** Secondary (emergency) roof drain systems shall be sized in accordance with Section 1106 ~~based on the rainfall rate for which the primary system is sized in Figure 1106.1 or on other rainfall rates determined from approved local weather data.~~ Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

42. \*\*Section 1109; delete this section...

43. \*\*Section 1202.1; delete Exception 2.

## **AMENDMENTS TO THE 2015 INTERNATIONAL FUEL GAS CODE**

### **Sec. 22-60 Amendments to the International Fuel Gas Code.**

1. **Section 101.1; Insert: City of Bedford**

2. \*\*Section 102.2; add an exception to read as follows:

**Exception:** Existing dwelling units shall comply with Section 621.2.

3. \*\*Section 102.8; change to read as follows:

**102.8 Referenced codes and standards.** The codes and standards referenced in this code shall be those that are listed in Chapter 8 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 shall mean the Electrical Code as adopted.

4. Section 106.6.2; insert "Appendix A Schedule of fees"

5. Section 106.6.3; Change to read as follows:

**106.6.3: Fee refunds.** The code official shall authorize the refunding of fees as provided for in the "Appendix A Schedule of fees"

6. Section 108.4; Change to read as follows:

**108.4: Violation Penalties.** Any person violating or failing to comply with any provision or requirement of this article shall be subject to the penalties provided for in Article I, Chapter 22 of the code of ordinances.

7. \*\*Section 306.3; change to read as follows:

**[M] 306.3 Appliances in attics.** Attics containing appliances shall be provided . . . *{bulk of paragraph unchanged}* . . . side of the *appliance*. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), ~~and~~ or larger where such dimensions

are not large enough to allow removal of the largest appliance. A walkway to an appliance shall be rated as a floor as approved by the building official. As a minimum, for access to the attic space, provide one of the following:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb (136 kg) capacity.
3. An access door from an upper floor level.
4. Access Panel may be used in lieu of items 1, 2, and 3 with prior approval of the code official due to building conditions.

**Exceptions:**

1. The passageway and level service space are not required where the *appliance* is capable of being serviced and removed through the required opening.
  2. Where the passageway is not less than ... *{bulk of section to read the same}*.
8. \*\*Section 306.5; change to read as follows:
- [M] 306.5 Equipment and appliances on roofs or elevated structures.** Where *equipment* requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access, ~~an~~ a permanent interior or exterior means of access shall be provided. Permanent exterior ladders providing roof access need not extend closer than 8-12 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliances' level service space. Such access shall . . . {bulk of section to read the same}. . . on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). ... {bulk of section to read the same}.
9. \*\*Section 306.5.1; change to read as follows:
- [M] 306.5.1 Sloped roofs.** Where appliances, *equipment*, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to a level platform at the appliance. The level platform shall be provided on each side of the appliance to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.
10. \*\*Section 306; add Section 306.7 with exception and subsection 306.7.1 to read as follows:
- 306.7 Water heaters above ground or floor.** When the attic, roof, mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.
11. \*\*Section 401.5; add a second paragraph to read as follows:
- Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an *approved tag*. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING 1/2 to 5 psi gas pressure Do Not Remove"

12. \*\*Section 402.3; add an exception to read as follows:

**Exception:** Corrugated stainless steel tubing (CSST) shall be a minimum of 1/2" ( 18 EHD).

13. \*\*Section 404.12; change to read as follows:

**404.12 Minimum burial depth.** Underground piping systems shall be installed a minimum depth of 42 18 inches (305 458 mm) top of pipe below grade, ~~except as provided for in Section 404.12.1.~~

14. \*\*Section 406.1; change to read as follows:

**406.1 General.** Prior to acceptance and initial operation, all piping installations shall be inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code. The permit holder shall make the applicable tests prescribed in Sections 406.1.1 through 406.1.5 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the code official when the piping system is ready for testing. The equipment, material, power and labor necessary for the inspections and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

15. \*\*Section 406.4; change to read as follows:

**406.4 Test pressure measurement.** Test pressure shall be measured with a monometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. ~~Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure.~~

16. \*\*Section 406.4.1; change to read as follows:

**406.4.1 Test pressure.** The test pressure to be used shall be no less than 1-1/2 times the proposed maximum working pressure, but no less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge. ~~irrespective of design pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.~~ For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one half inches (3 1/2"), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 1/2"), a set hand, a minimum of 2/10 pound incrementation and a pressure range not to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing.

17. \*\*Section 406.4.2; change to read as follows:

**406.4.2 Test duration.** Test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than fifteen (15) minutes. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa),

the test duration shall be held for a length of time satisfactory to the Code Official, but in no case for less than thirty (30) minutes. *(Delete remainder of section.)*

18. \*\*Section 409.1; add Section 409.1.4 to read as follows:

**409.1.4 Valves in CSST installations.** Shutoff valves installed with corrugated stainless steel (CSST) piping systems shall be supported with an *approved* termination fitting, or equivalent support, suitable for the size of the valves, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the valve. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's piping, fittings, and valves between anchors. All valves and supports shall be designed and installed so they will not be disengaged by movement of the supporting piping.

19. \*\*Section 410.1; add a second paragraph and exception to read as follows:

Access to regulators shall comply with the requirements for access to appliances as specified in Section 306.

**Exception:** A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

20. \*\*Section 621.2; add exception as follows:

**621.2 Prohibited use.** One or more unvented room heaters shall not be used as the sole source of comfort heating in a dwelling unit.

**Exception:** Existing *approved* unvented heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when *approved* by the Code Official unless an unsafe condition is determined to exist as described in Section 108.7.

## **AMENDMENTS TO THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE**

### **Sec. 22-62 Amendments to the International Energy Conservation Code.**

1. Section 101.1; Insert: City of Bedford
2. \*\*Section C102/R102; add Section C102.1.2 and R102.1.2 to read as follows:

**C102.1.2 Alternative compliance.** A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance.

**R102.1.2 Alternative compliance.** A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4 and R403.3.3 respectively.

3. Section 108.4; Change to read as follows:  
**108.4: Violation Penalties.** Any person violating or failing to comply with any provision or requirement of this article shall be subject to the penalties provided for in Article I, Chapter 22 of the code of ordinances.



4. Section C202 and R202; add the following definition:

**\*\*\*PROJECTION FACTOR.** The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

5. Section R202; add the following definition:

**\*\*\*DYNAMIC GLAZING.** Any fenestration product that has the fully reversible ability to change its performance properties, including *U*-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

6. \*\*\*R402.4.1.2 Testing; Add a last paragraph to read as follows:

Mandatory testing shall only be performed by individuals that are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

7. \*\*\* R403.3.3 Duct Testing (Mandatory) Add a last paragraph to read as follows:

Mandatory testing shall only be performed by individuals that are certified to perform duct testing leakage testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

8. \*\*Section C402.2.7/R402.2; Add Section C402.2.9 and R402.2.14 to read as follows:

**Section C402.2.7/R402.2.14 Insulation installed in walls.** To insure that insulation remains in place, insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing, netting or other equivalent material approved by the building official.

9. \*\*\*Section R405.6.2; add the following sentence to the end of paragraph:

Acceptable performance software simulation tools may include, but are not limited to, REM Rate™, Energy Gauge and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the building official.

10. \*\*\*TABLE R406.4 MAXIMUM ENERGY RATING INDEX; amend to read as follows:

**TABLE R406.4<sup>1</sup>**  
**MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	65

<sup>1</sup> This table is effective until August 31, 2019.

**TABLE R406.4<sup>2</sup>**  
**MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	63

<sup>2</sup> The table is effective from September 1, 2019 to August 31, 2022.

**TABLE R406.4<sup>3</sup>**  
**MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
3	59

<sup>2</sup> This table is effective on or after September 1, 2022.

**AMENDMENTS TO THE 2014 NATIONAL ELECTRICAL CODE**

**Sec 22- 200 National Electrical Code Adoption**

The National Electrical Code, 2014 edition as published by the National Fire Protection Association, a copy of which is on file in the office of the City secretary is hereby adopted by reference. Unless deleted, amended, expanded or otherwise changed herein, all provisions of such Code shall be fully applicable and binding; providing for the issuance of permits and the collection of fees thereof.

**Sec 22- 201 Amendments to the National Electrical Code**

The following sections of the National Electrical Code are hereby amended to read as follows:

**1. \*\*\*Article 100, Part I; amend the following definition:**

**Intersystem Bonding Termination.** A device that provides a means for connecting bonding conductors for communication systems and other systems such as metallic gas piping systems to the grounding electrode system.

**2. \*\*\*Article 110.2; change the following to read as follows:**

**110.2 Approval.** The conductors and equipment required or permitted by this Code shall be acceptable only if approved. Approval of equipment may be evident by listing and labeling of equipment by a Nationally Recognized Testing Lab (NRTL) with a certification mark of that laboratory or a qualified third party inspection agency approved by the AHJ.

Exception: Unlisted equipment that is relocated to another location within a jurisdiction or is field modified is subject to the approval by the AHJ. This approval may be by a field evaluation by a NRTL or qualified third party inspection agency approved by the AHJ.

Manufacturer's self-certification of any equipment shall not be used as a basis for approval by the AHJ.

Informational Note: See 90.7, Examination of Equipment for Safety, and 110.3, Examination, Identification, Installation, and Use of Equipment. See definitions of *Approved*, *Identified*, *Labeled*, and *Listed*.

**3. \*\*Article 230.71(A); add the following exception:**

Exception: Multi-occupant buildings. Individual service disconnecting means is limited to six for each occupant. The number of individual disconnects at one location may exceed six.

**4. \*\*\*Article 240.91; delete the Article.**

**5. \*\*Article 300.11; add the following exception:**

Exception: Ceiling grid support wires may be used for structural supports when the associated wiring is located in that area, not more than two raceways or cables supported per wire, with a maximum nominal metric designation 16 (trade size 1/2").

**6. \*\*Article 310.10; add subsection (J) to read as follows:**

**310.10 (J) Aluminum Wire.** Conductors for services and general wiring in this article shall be of copper.

*Exception: (1) Special conditions approved by the authority having jurisdiction.*

7. **\*\*Article 310.15(B)(7); change to read as follows:**

**(7) 120/240-Volt, 3-Wire, Single-Phase Dwelling Services and Feeders.** For dwelling units, conductors, as listed in Table 310.15(B)(7), shall be...*{text unchanged}*...provided the requirements of 215.2, 220.61, and 230.42 are met. This Article shall not be used in conjunction with 220.82.

8. **\*\*Article 500.8(A)(3); change to read as follows:**

**500.8 Equipment.** Articles 500 through 504 require equipment construction and installation standards that ensure safe performance under conditions of proper use and maintenance.

Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care with regard to installation and maintenance.

Informational Note No. 2: Since there is no consistent relationship between explosion properties and ignition temperature, the two are independent requirements.

Informational Note No. 3: Low ambient conditions require special consideration. Explosion proof or dust-ignition proof equipment may not be suitable for use at temperatures lower than -25°C (-13°F) unless they are identified for low-temperature service. However, at low ambient temperatures, flammable concentrations of vapors may not exist in a location classified as Class I, Division 1 at normal ambient temperature.

**(A) Suitability.** Suitability of identified equipment shall be determined by one of the following:

- (1) Equipment listing or labeling
- (2) Evidence of equipment evaluation from a qualified testing laboratory or inspection agency concerned with product evaluation
- (3) Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evaluation or an ~~owner's~~ engineering judgment signed and sealed by a qualified Licensed Professional Engineer.

Informational Note: Additional documentation for equipment may include certificates demonstrating compliance with applicable equipment standards, indicating special conditions of use, and other pertinent information. Guidelines for certificates may be found in ANSI/ISA 12.00.02, *Certificate Standard for AEx Equipment for Hazardous (Classified) Locations*.

9. **\*\*Article 505.7(A) changed to read as follows:**

**505.7 Special Precaution.** Article 505 requires equipment construction and installation that ensures safe performance under conditions of proper use and maintenance.

Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care with regard to the installation and maintenance of electrical equipment in hazardous (classified) locations.

Informational Note No. 2: Low ambient conditions require special consideration. Electrical equipment depending on the protection techniques described by 505.8(A) may not be suitable for use at temperatures lower than -20°C (-4°F) unless they are identified for use at lower temperatures. However, at low ambient temperatures, flammable concentrations of vapors may not exist in a location classified Class I, Zones 0, 1, or 2 at normal ambient temperature.

**(A) Implementation of Zone Classification System.** Classification of areas, engineering and design, selection of equipment and wiring methods, installation, and inspection shall be performed by a qualified persons Licensed Professional Engineer.

**10. \*\*\*Article 680.25(A) changed to read as follows:**

**680.25 Feeders.** These provisions shall apply to any feeder on the supply side of panelboards supplying branch circuits for pool equipment covered in Part II of this article and on the load side of the service equipment or the source of a separately derived system.

**(A) Wiring Methods.**

**(1) Feeders.** Feeders shall be installed in rigid metal conduit or intermediate metal conduit. The following wiring methods shall be permitted if not subject to physical damage:

- (1) Liquidtight flexible nonmetallic conduit
- (2) Rigid polyvinyl chloride conduit
- (3) Reinforced thermosetting resin conduit
- (4) Electrical metallic tubing where installed on or within a building
- (5) Electrical nonmetallic tubing where installed within a building
- (6) Type MC cable where installed within a building and if not subject to corrosive environment
- (7) Nonmetallic-sheathed cable
- (8) Type SE cable

*Exception: An existing feeder between an existing remote panelboard and service equipment shall be permitted to run in flexible metal conduit or an approved cable assembly that includes an equipment grounding conductor within its outer sheath. The equipment grounding conductor shall comply with 250.24(A)(5).*

**Section 22 - 202 Temporary Utilities**

When for good and sufficient cause it is necessary to have utilities turned on any installation before final certificate can be issued, the building official may authorize a temporary permit to be issued for a period of 30 days.